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ABSTRACT

A pilot project to assess the usefulness of rural volunteer Emergency Medical Coordinators (EMC's) was initiated in 36 rural Georgian towns of less than 2,000 population. An EMC program was established in those 36 rural towns that had no physician or ambulance service, to provide a rapid response to accidental injuries in order to maintain life while professional help was on the way. Selected for the program by their communities according to certain criteria, the EMC's possessed two common traits--the realization that their town needed a "first responder" and the dedication to become an EMC. After EMC candidates had studied an assigned text and workbook, they attended class sessions in Atlanta for 40 hours of formal training. Large group presentations were reviewed and expanded in small group practice sessions. Trained EMC's have taken refresher classes and have maintained knowledge and skills by being observers in ambulances and hospital emergency rooms. As a result, volunteers have been praised for their lifesaving ability and 11 have received lifesaving certificates. While data collection has not been completed, it has been concluded that EMC's have been a viable alternative to the lack of health care manpower in rural areas and have been seen as an important element in rural development, with an expected high impact on the delivery of emergency medical services through the effective use of existing manpower resources. (AN)

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A VIABLE ALTERNATIVE: RURAL VOLUNTEER EMERGENCY MEDICAL COORDINATORS

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INTRODUCTION

This paper discusses the tasks involved in initiating, operating, and evaluating an applied research project concerned with the delivery of emergency medical services in rural towns. This three-year pilot project is being conducted by the Health Systems Research Center of the Georgia Institute of Technology.[1]

Significance of Emergency Care

Today, diseases of the heart and accidents rank first and fourth as the leading causes of death in the United States (Health Services Research, 1975:35). A relatively large proportion of these deaths are untimely since the victims are in the social and economic prime of their lives. However, prompt techniques of resuscitation and emergency medical care have been shown to save lives (Boyd, 1976:105). If an effective emergency medical system existed, many lives might be saved.

An emergency medical system can be defined as a system of resources to eliminate preventable death and disability resulting from acute medical illness of injury. Basically, the system consists of knowledge of emergency first aid, communication, transportation, medical facilities and is highly dependent on skilled personnel.

Provision of Emergency Services in Rural Areas

An effective EMS system is an important need of rural areas (Galiher, 1975:110 and U.S. Senate, 1979:47). First, Snyder states that accidents on

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rural roads are more likely to be fatal due to isolation and poor emergency medical capability (1975:7). In a study by Waller, 37 percent of those who died in the first hour in urban areas died at the site of injury as compared with 75 percent in rural areas. These differences could not be explained in terms of greater severity since 53 percent of fatal urban crashes were judged nonsurvivable (Waller, 1969:2256). Many high-risk jobs (agriculture, forestry, mining, etc.) are more likely to be found in rural areas than in urban areas. In addition, rural areas have a high percentage of elderly people contributing to the seriousness of medical emergencies (Ahearn, 1979:5, 6).

Although the need for a rapid response to medical emergencies exists, many characteristics of rural towns hinder this response. First, there is a lack of health care services (U.S. Senate, 1979:31). Second, the low population density of rural areas creates an insufficient tax base to support such services. Since many rural areas cannot afford to provide emergency services, long distances must be traveled to reach these resources. When an emergency medical situation arises, valuable time is lost waiting for help to arrive. In many rural towns, the emergency medical system fails to provide for rapid response to emergencies.

One viable alternative to the lack of emergency medical manpower in rural areas is the utilization of volunteers, an important resource in terms of rural development (Stam and Stenson, 1975:50). These volunteers will serve as first responders, the first link in the EMS system. Many life-threatening situations in rural areas might be stabilized by these volunteers.

Rural Volunteer Emergency Medical Coordinators

To upgrade the quality of emergency medical care in underserved rural areas, a pilot project to assess the usefulness of Rural Volunteer Emergency

Medical Coordinators (EMCs) was initiated in 36[2] rural Georgian towns. The EMCs provide initial care prior to the arrival of more sophisticated medical resources, and act as coordinators, organizers and informational resources as a way of meeting emergency medical needs of the community in which s/he lives.

More specifically, volunteers selected by their towns according to certain criteria (see Figure 1) were trained and equipped as first responders to emergency situations in their home communities.

The candidate:

1. Has a private telephone.
2. Has a car available at all times.
3. Is in good physical condition.
4. Works in the community.
5. Lives in the community.
6. Is competent to learn the necessary skills.
7. Is respected in the community.
8. Wants to be an EMC.

Figure 1. Emergency Medical Coordinator Selection Criteria

Much like the volunteer fire fighter, the EMCs will go about their regular daily activities until an emergency occurs. Community residents have received phone stickers with the numbers of local ambulance service(s), local EMT(s), and the EMCs. When an emergency situation occurs, they have been instructed to call (1) their local ambulance service and (2) the EMCs who can probably be on the scene before an ambulance can arrive from a nearby town.

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[2]Originally, 48 towns were approached. However, five could not find suitable sponsors and seven could not find suitable EMCs.

EMCs Place in EMS

First, the EMC program is geared to rural towns that have no physician or ambulance service and are dependent upon nearby communities for emergency services. Second, the EMC project is not to circumvent or replace existing patterns of emergency response. The program provides a rapid response to maintain life while professional help is on the way. The EMCs do not transport.

DESCRIPTION OF THE EMC PROJECT

Participating Rural Communities

While no consensus has been reached on one composite definition of "rural," the towns in this project correspond to several singular measures of rural which are often used, i.e., population size, remoteness from urban areas and lack of services (Hazen, 1975:21).

The rural Georgian towns of less than 2000 population included in this project are located 30 to 100 miles away from Atlanta. Only three of the towns are located on the fringe of an SMSA. The towns in this study have no practicing physician or ambulance service.

In addition, information was collected on awareness and perceived accessibility to emergency medical care in these rural towns. A telephone survey of households was conducted during the months of December 1977 and January 1978 prior to the introduction of the EMC idea. The survey revealed the following information:

- Seventy-three percent believed that emergency medical care was too far away.
- If an emergency situation occurred (leg injury, car accident), 66 percent and 58.8 percent of the respondents would seek help from outside their town limits.
- Twenty-three percent of the respondents had first aid training.

The results of this survey indicated that a majority of the respondents perceived a need for improved emergency medical services in their town.

Recruitment

Involving the communities and using their input in health care decision-making is needed (Hutch, 1976:243). Therefore, this research project utilized the existing community structures to identify the volunteers.

The importance of involving the community in the selection of EMCs can not be overemphasized. A first responder system works only if it is used. Community involvement probably will aid in the diffusion of the EMC concept and acceptance of the volunteers. Since this program depends on finding effective volunteers, community members are probably best qualified to select the volunteers who would be effective EMCs and most important, would be utilized by the town.

Approach to the Town. The assumption was made that the approach to the town was important to future implementation of the EMC idea in other states. The towns were randomly selected to be approached in two different manners: (1) through the elected leadership or (2) through other organizational bodies. These approaches will enable the researchers to test assumptions about working through the formal, public leadership as opposed to using the voluntary, special interest structures as the best way to identify the most effective volunteer.

Initial Contacts. Five staff members of the EMC project acted as community coordinators for the towns selected for this project. The first role of the community coordinator was to find townspeople who were interested in this project. These staff members made the initial contacts with community and governmental leaders to explain the project and eventually, to assist the leaders in selecting the volunteers.

These initial contacts were made in person. Although a newspaper release has been sent to the county papers describing the project, there had been no previous contact between the coordinator and the town until his/her arrival in town.

First, the coordinators drove into the town and examined the characteristics of the town. These outward characteristics of the town helped to define the initial contacts. Also, the characteristics gave the coordinator a feel for potential sponsor organizations.

After examining the town, the coordinator described the project to a few townspeople. Usually, these people were able to direct the coordinator to a community leader who might be interested in the project. An effective means of identifying interested community leaders was through conversations with the postal clerk or a store owner. These people were readily accessible and had a good knowledge of the community structure.

The next step was to describe the project to community leaders with the hope of finding a potential sponsor organization. Along with describing the project to interested leaders, the coordinator stated the criteria for selection of the EMCs and the role of the sponsor organization. A newsletter, $\underline{EMC^2}$, was given to these community leaders. This newsletter explained the project and the importance of a rapid first response system to emergency situations. The initial newsletter served as a means for publicizing the EMC project in the town.

Eventually, the role of the initial contacts was to suggest possible sponsoring organizations and arrange a meeting with these organizations. The following excerpt from a coordinator's logbook described the intial contact stage:

> United Methodist Church... The railroad runs down parallel to Highway 18, the main street in Concord. There is an area off the main road, fairly residential with large houses. Largest building in this business area of town seems to be R. F. Strickland General Store... post office, police force, Concord Banking Company, a grocery store... We walked into the store and met Roger Strickland, the father of the present owner. The store has been in the family now for five generations. Roger Strickland introduced us to his wife, Pat, who seems to be the chief organizer of the Concord Community Club, a women's club which is actively seeking a project to do. She knew about CPR and was very aware of Concord's lack of doctors... We're going to go to the Community Club meeting the second Tuesday of this month.

One must note that not all initial contacts were not this profitable. In some towns, many community members were contacted before a potential sponsoring group was suggested. Overall, towns were very receptive to the EMC concept. This enthusiasm was partially due to the interesting topic and the need for emergency medical care. One can see the importance rural towns place on emergency medical services in the following excerpt from a coordinator's logbook:

> Molena is the smallest town we have been in... Doesn't seem to be any kind of activity. We spoke to the vice president of the bank who directed us to Mrs. Harriet Bertram (president of the Civic Club)... 1st reaction (Harriet) was that the Civic Club had too many projects--but warmed to the idea as we explained the actual job involved, talked about taking her choking child to hospital--a car accident which took ambulance one hour to arrive... promised to get folks to a meeting (Civic Club and City Council members).

Sponsor Organization. The coordinator's next job was to meet with potential sponsor organizations, to present the EMC concept and to get a formal indication of support for the concept. A slide-tape presentation, "What Happen Now?" was used to elicit interest of the community organization and to provide a more standardized presentation for the coordinators. After the slide-tape show, the coordinator outlined the role of the sponsor group. Their role included the selection of two volunteers to be EMCs and the commitment to pay for one of the volunteer's emergency first aid kits. Georgia Tech supplied the other kit.

One interesting point concerning the role of the sponsor organization was the exclusion of paperwork. Many towns were amazed at the simplistic requirements for acceptance into the project. As one coordinator stated:

> ... A good point to remember is the bit about what the community has to do to participate. This came up this evening and simply, I said that the only thing you have to do is say yes, you would like to participate. There is no paperwork, no administrative red tape to shuffle through... It's a good point to make because sometimes when people hear about federally funded projects, they begin to think of a lot of paperwork and forms to fill out...

Following the presentation, the coordinators answered any questions concerning the project. The enthusiasm and interest in the EMC project could be observed by the number of questions asked at these meetings. Usually, the first question asked was, "How are we going to find people to fit these criteria? The town isn't big enough." Most towns managed to find EMCs.

The following excerpt from a coordinator's logbook described a meeting with a potential sponsor organization:

> VFD--30 members present--relatively young group... First, a film was shown by the West Georgia React Team. During this film, Robert Gamble (a previous contact from a meeting with the town council) arrived. He was dinfinitely having a rough night--he had been in a ditch attempting to keep the water supply going. The head of the VFD joined us. He said that he was very interested in our program--appreciated us coming back down. Talked for about 20 minutes. After the slide-tape show, I went over many of the questions that were asked in the City Council meeting and the subgroup meeting of the PTA. Here's a brief list of the questions asked by the VFD:
>
> - Do the EMCs have to be a wiz?
> - Who will be the instructors?
> - How will this project be advertised?
> - What's in the first aid kit?
> - How will we replace material? Can we buy more than two first aid kits?
> - Can we have a husband-wife team?
> - How about females--going into shady areas?
> - Will the EMCs become pseudo doctors for the community?
> - This may be a very messy job.
> - Do you think they could become EMCs?
> - Can we have more than two?
> - Liability?
> - Can they transport?
> - Wellington Mill in town--should they know about program and have an EMC?

> This town will probably be a good town. They were very interested... There were many qualified people; however, most were not in town all day. Whitesburg, following suit, did not think anyone in town qualified. By the end of the meeting, quite a few names were mentioned.

Selection Process. As stated previously, the key to the success of this project was the towns' selection of the EMCs. The towns used many different selection methods. A few of the methods utilized to select EMCs were (1) a subcommittee composed of governmental and organizational leaders selected the EMCs; (2) interested citizens searched their towns for potential volunteers; (3) the town council or voluntary organizations selected EMCs; (4) as a last resort, the community coordinator found the EMCs.

The EMCs are a diverse group. However, they possess two common characteristics: the realization that their town needed a first responder and the dedication to become an EMC. A few of the EMCs are described (from the logbooks):

> A grocer and head of the volunteer fire department. He said that he definitely fit the criteria but he did not think he could handle the sight of blood.

> A housewife was quite enthusiastic about the prospects of becoming an EMC and indicated that she was trying to find out how she could receive CPR training. She also watches over several elderly people in her neighborhood.

> A cabinet-maker--used to be a surgical assistant and worked in an emergency room in a Detroit hospital... He is strong, vigorous, seems to be a community-minded person.

EMC Training Program

The training program was held in Atlanta on two weekends in the summer beginning Friday evening through Sunday afternoon. All expenses, hotel room, meals, transportation, and materials were paid for by the project. Thirty-six communities, 69 EMCs, participated in this training program.

The training program included the Red Cross Advanced First Aid and Emergency Care and the Department of Transportation Crash Injury Management. The training program was 40 hours.

The main text was Emergency Care. The text was supplemented by a workbook. These books were sent to the EMCs two weeks prior to the training program. They were instructed to read the first four chapters in the main text and to complete the corresponding material in the self-instruction workbook for the first week of training. The remainder of the book and workbook was to be completed by the second week of training.

The lecturer was an attorney, municipal court judge, an EMT instructor and Red Cross First Aid Instructor. His years of experience enabled him to provide high impact life and death illustrations of each principle discussed. He interspersed his lectures with films, demonstration and "hands on" experience.

The large group presentations were reviewed and expanded in small group practice sessions. The instructors of these sessions were able to offer many first hand experiences in emergency first aid.

One might question the extent of the EMCs' training. Why only 40 hours of training? Why not train these volunteers to be EMTs? Waller states that people are dying because the most basic first aid principles are not being followed. One does not have to complete an EMT course to know these basic principles (Waller, 1973:1441). Also, the volunteers might have been reluctant to take an EMT course. The time involved and the fear of not being able to handle the training could have discouraged potential EMCs. Therefore, a training program which would ease them into emergency care was utilized.

Since EMC training, 11 EMCs have become EMTs. The 40-hour course allowed some to realize they were capable of learning emergency medical care principles and gave them the motivation to continue their education.

Equipment. Each EMC received a first aid kit consisting of the materials utilized in the training program. The cost of one kit was $230.

Recognition. While the purpose of volunteering was not go get recognition, some attention and approval were essential in maintaining the success of this volunteer program. After the training program, a banquet and awards night was held. EMCs were given certificates indicating their completion of the training program. Also, they received decals, patches and a license tag with the EMC logo.

The news media served as an important source of recognition was well as diffusing the EMC concept. The television stations covered the training program. The Sunday magazine section of an Atlanta newspaper contained an article entitled "Emergency," which explained the EMC project and the training program. The local newspapers had pictures of their EMCs and articles explaining their new roles.

Retraining. Periodically, refresher training programs are needed. Since very few emergencies occur in these small rural towns, the EMCs need to refine their first aid skills. The retraining programs allow the EMCs to reassure their ability and offer the EMCs an opportunity to discuss the program. The following statement from an EMC expresses the need for retraining:

> I think the retraining program was very beneficial to everyone. When you go for a long period of time and don't see some of the things we have learned, we seem to forget them. I think things we covered were of great importance. Maybe the next session can be longer so we can cover more material...

To date, two refresher training programs have been held in Atlanta. On January 26 and 27, 1979, the EMCs reviewed CPR, general first aid techniques, and discussed situations they encountered. On August 10, 11, and 12, 1979, the EMCs took the Red Cross 16-hour CPR instructor's course.

One should note that the EMCs do not wait for retraining programs to refresh their skills. Many ride as observers with their local ambulance services and/or are observers in the emergency room of nearby hospitals.

EMCs: WORKING IN THEIR COMMUNITIES

The EMCs' role is twofold: (1) to respond to emergency medical situations in their town and (2) coordinate the EMS response system in their town, i.e., are community members aware of the program?--do they know how to access the system?

EMCs Respond to Emergency Situations

The EMCs have been working in their communities for a year and eight months. The EMCs in some towns have not had one emergency call. Most EMCs have responded to many different emergency situations. The EMC calls range from very minor incidents (taking a person's blood pressure) to very serious life-threatening emergencies (maintaining an airway, performing CPR). Although data on the incidents are not complete at this time, incident data have been tabulated for the first six months.

> While many EMC calls have been of a nonemergency nature, a total of 81 cases were reported in the first six months. In these 81 cases, the EMC was called, responded, and the patient was subsequently transported by the ambulance. Approximately 48 percent of these cases involved traffic accidents, 15 percent involved injuries of some other type, and 36 percent were of various medical conditions. Based on estimates of time through incident data submitted by the EMCs, the EMC response time for these cases was approximately 3.6 minutes. The EMC was also on the scene an average of approximately 17 minutes prior to arrival of the ambulance service. For one community, the ambulance arrival time was approximately 32 minutes (Myrick, 1979:37).

Already, some EMCs have been praised for their life-saving ability. A few EMCs have received letters of praise from their local EMS service. Another EMC was the first recipient of the "Lifesaver Commendation Award" presented by the Woodmen of the World. Eleven EMCs have received the EMC Lifesaving Certificate.

Community Awareness and Acceptance

To encourage support, the EMCs publicized through the local papers, presented the concept to various community groups, distributed emergency telephone numbers through the use of stick-on decals, held CPR classes, etc.

At the first retraining program, the EMCs were asked if their towns were aware of the EMC project. The majority of the EMCs believed their towns knew about the project. Many EMCs mentioned techniques which helped to increase community knowledge. These aids were as follows: (1) door-to-door explanation of the project by the EMCs; (2) shopkeepers explained the program; (3) newspaper articles, and (4) word of mouth of people who have utilized the service.

Basically, the problems the EMCs experienced in their communities concerned general knowledge of the EMC, knowledge of the EMCs' ability and knowledge of the EMCs in rural areas.

Also, the EMCs were asked to express their opinion concerning community acceptance. A majority of the EMCs believed that they were accepted in their towns. Two problems some EMCs experienced concerned (1) accepting the EMCs' ability to respond to a medical emergency and (2) remembering to call an EMC when an emergency occurred.

Perhaps the problems the EMCs are experiencing in their towns will disappear or lessen in time. Probably, the newness of this project is a factor

affecting the underutilization of EMCs. This factor will be evaluated in the future since one purpose of this project is to monitor changes in awareness and acceptance over a period of time.

Support of EMC

The EMCs needed support of the EMS system. These people involved in the system can help to spread the word about the project and to legitimize the role of the EMC.

The Georgia Tech staff was effective in gaining the support of two key officials in the State EMS system: the director of the Georgia Emergency Health Unit and the director of the Department of Highway Safety. These men were guest speakers at the training and retraining program, respectively.

Of course, the Georgia Tech staff continues to support the EMCs. Periodically, the coordinators contact their EMCs by telephone or by visiting the towns. Also, the coordinators, at the request of the EMCs, will explain the project and show a slide-tape presentation, "EMC--Three Little Letters That Spell Ready," which explains the training program and the role of the EMC in his/her community.

In addition, the EMCs contacted the EMS health care personnel in their areas. The acceptance of the local EMS was essential since EMCs would be working directly with these people. An example of a good working relationship betwen the local EMS and EMCs exists in Pike County. The Sheriff and the EMCs have devised an emergency medical care plan. Each EMC has a certain territory where s/he could arrive at the scene rapidly. When a Sheriff receives an emergency medical care call, he calls the appropriate EMC. If he cannot contact the EMC designated for that area, he calls the next closest EMC. The county has agreed to refurnish any equipment the EMC uses.

At the retraining programs, the EMCs were asked to evaluate their relationship with the local EMS. The majority believed that they have been accepted. An important factor related to acceptance was personally contacting the ambulance company and explaining the project and their training. Another important factor was their ability to handle an actual emergency situation. Some EMCs did experience problems with their local EMS. These problems concerned the ambulance companies not perceiving a need for their service and the qualifications of EMCs.

EVALUATION

The EMC program is an experimental program. A major goal of EMC is to determine the nature and extent of the benefits of this concept. Therefore, analysis will be conducted to determine the effectiveness of EMC. The analytical evaluation will include differential approach to implementation, functioning of the system (e.g., community awareness, acceptance, utilization) and EMC performance. These variables will be measured by means of: (1) community coordinator's logbook; (2) biographical questionnaire on the EMC; (3) activity logs from the EMCs; (4) incident reports (the EMCs were given incident forms to complete whenever an emergency medical situation occurred in their town); (5) ambulance trip reports; (6) household telephone survey; and (7) EMCs' evaluation of EMC.

It should be strongly emphasized that in addition to measuring "end" results of program effectiveness, analysis will be made of the various steps involved. That is, the process side of conducting this program will be evaluated.

CONCLUSIONS

First, researchers have stressed the importance of finding alternative solutions to rural health care problems. Ahearn and Greene state that emergency medical coordinators, the first link in the EMS system, are one viable alternative to the lack of health care manpower in rural areas (1979:27; 1970:21).

Second, these EMCs are important to rural development. Voluntarism plays an important role in the delivery of many community services (Stan and Stinson, 1976:50). Likewise, community services play a very important role when assessing the quality of life available to rural towns (Cordes, 1976:73). Frequently, the only alternatives to volunteers are to finance these services through local taxes or to do without. This is especially true in small, underserved rural towns. When considering the overall well-being of the farm and rural community, EMC should be considered.

Finally, this project could have enormous impact on the delivery of EMS through the effective use of existing manpower resources, as well as substantial lifesaving significance for critical life-threatening emergencies.

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